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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,752	01/27/2004	Zenya Nagashima	075834.00450	1915

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EXAMINER

PENG, CHARLIE YU

ART UNIT

PAPER NUMBER

2883

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/765,752	Applicant(s) NAGASHIMA, ZENYA	
	Examiner Charlie Peng	Art Unit 2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 12-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments with respect to claims 1-11 have been considered and are persuasive. Applicant argues that a maximum diffusion range is not taught or suggested by Zhou or Yanagawa references, but the arguments are moot in view of the new ground of 35 U.S.C. 103(a) rejection presented in this office action.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,205,274 to Zhou in view of U.S. Patent 5,552,918 to Krug et al. Zhou teaches an optical device having an optical fiber 101 having an inclined end face at one end, wherein the end face is has a reflective coating 105,

a light source 102 located radially from the center of the optical fiber 101 to emit light and faces the reflective coating 105,

a light detector 118 places along an optical axis of the optical fiber 101 and adjacent to the one end of the optical fiber 101. (See at least Fig. 7A and description) Zhou is silent on how light diffuses from the light source 102. Krug teaches an optical transceiver module having a light transmitter 2, a light receiver 6, and a fiber 4 all housing in a common housing for the purpose of substantially reducing troublesome

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back-reflections and undesired crosstalk. (Column 1, line 59 – column 2, line 23.) Since the housing and the transceiver's structure serve to prevent crosstalk between the light transmitter and the light receiver, the light receiver must be outside any light diffusion or transmission range of the light transmitter.

Since both the Zhou reference and the Krug reference are of analogous art placing optical elements orthogonal to light transmission path of the optical fibers, the purpose of using the teachings of the Krug reference would be recognized as relevant prior art to Zhou's invention. It would have been obvious to one of ordinary skill in the art at the time the invention was made to built a housing, preferably opaque, as suggested by Krug's teachings around the optical fiber in Zhou's invention. The motivation would be to reduces or eliminate interference by light signal coming directly from the source, as the detector would only receive light signal from the optical fiber as intended.

With reference to claims 2 and 5, the inclined end face comprises a whole of the end face of the optical fiber, and a core of the optical fiber would inherently have its end face inclined as well.

With reference to claim 3, the light source 102 is facing the inclined end face.

With reference to claims 4 and 10, a supporting substrate 100 for the light source 102 is attached to the inclined end face, abutting a prism 104, which also supports the light detector 118. (See at least Fig. 7B and description)

With reference to claim 6, the end face inclines approximately 45°.

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With reference to claim 7, Zhou teaches that the detector 118 can also be placed so that a normal line to its light receiving plane is perpendicular to an optical axis of the optical fiber 101. (See at least Fig. 6A and description)

With reference to claim 8, it is well known to those having ordinary skill in the art at the time the invention was made that a surface-emitting semiconductor laser can be used as an optical source. It would have been obvious to modify the McMahon invention by substituting an optical detector and a surface-emitting semiconductor for items 72 and 61, respectively. The motivation would be that surface-emitting semiconductor laser has advantages of a low threshold voltage, low power consumption, and easy making of a circular spot of light.

With reference to claim 9, a circuit is formed around control electronics 107.

#### ***Allowable Subject Matter***

Claims 12 and 16 are objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Zhou and Krug teach the optical communication module except for the end face of the optical fiber to further including a non-angled portion (i.e., a portion of the end face being perpendicular to the optical fiber's axis). The arrangement of optical components of the optical communication module also dictates that at least part of the optical fiber's core must be on the inclined part of the optical fiber's end face. Although a few prior art references offer optical fiber that would meet the structural limitation, e.g. U.S. 6,236,793, no suggestion or motivation for combination is available in the prior art references or the general

knowledge as required (*Graham v. Deere*). It is the examiner's position that the prior art of record, taken alone or in combination, fails to disclose or render obvious the optical fiber having an end face with a non-angled portion, in combination with the rest of the limitations of the base claim.

Claims 13-15 and 17-19 are also objected to but allowable as dependent claims of claims 12 and 16.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlie Peng whose telephone number is (571) 272-2177. The examiner can normally be reached on 9 am - 6 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Frank G. Font  
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